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inserting null packets into other IPG pages such that all of said IPG pages are equal in length; and
adding switching packets at an end of said IPG sequence after said null packets.

20. (Amended) The method of claim 17, further comprising:
buffering all packets for all IPG pages of for each sequence of IPG pages prior to forming said transport stream;
ordering packets of said IPG pages in said transport stream, wherein said packets for each IPG page appear at slightly higher or lower frequencies, thereby finishing at a common point; and
adding switching packets at an end of each sequence of IPG pages.

21. (Amended) The method of claim 17, further comprising:
starting each IPG page sequence together;
waiting until all packets for all of said IPG pages are generated; and
inserting switching packets in said bitstreams at a common interval and location in said bitstreams.

REMARKS

This response is intended as a full and complete response to the non-final Office Action mailed December 6, 2002. In the Office Action, the Examiner notes that claims 2-21 are pending of which claims 2-21 are rejected. By this amendment, the applicants have amended claims 3, 7, and 15-21. Claims 2, 4-6, and 8-14 continue unamended.

In view of both the amendments presented above and the following discussion, the applicants submit that none of the claims now pending in the application are non-indefinite, anticipated, or obvious under the respective provisions of 35 U.S.C. §112, §102, and §103. Thus, the applicants believe that all of these claims are now in allowable form.

It is to be understood that the applicants, by amending the claims, do not acquiesce to the Examiner's characterizations of the art of record or to applicants'

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subject matter recited in the pending claims. Further, applicants are not acquiescing to the Examiner's statements as to the applicability of the art of record to the pending claims by filing the instant responsive amendments.

THE REJECTIONS

a. 35 U.S.C. §112

The Examiner has rejected claim 3 under 35 U.S.C. §112 stating, "In claim 3, the term 'the composited frame' (lines 3) lacks of antecedent basis." The applicants respectfully traverse the rejection.

The applicants have amended claim 3 to recite "said video frame sequence" from "the composite frame sequence". As such, the applicants submit that claim 3, as amended, has proper antecedent basis. Therefore, the applicants respectfully request that the rejection be withdrawn.

b. Double Patenting

The Examiner has rejected claims 2-8, 14-17 and 19-21 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 and 10-13 of U.S. Patent No. 6,415,437, issued July 2, 2002, hereinafter "the '437 patent."

1. Claims 2-8 and 14.

The applicants agree to file a Terminal Disclaimer to resolve the present double patenting rejection, if and when the subject matter patent application is finally allowed. As such, the applicants will file a Terminal Disclaimer in accordance with 37 C.F.R. §1.321 in the future, if necessary.

2. Claims 15-17 and 19-21.

The applicants have amended claims 15-21. Specifically, the applicants have amended the apparatus claims recited in claims 15-21 to include relevant limitations

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similar to those discussed below with respect to the various method claims. In particular, claim 15, as amended, recites:

"A method of producing an encoded user interface, said encoded user interface comprising a plurality of bitstreams representing respective interactive program guide (IPG) pages and forming thereby a sequence of IPG pages, said method comprising:

combining, in a frame synchronized manner, background imagery with each of a plurality of video sequences to form a plurality of IPG video portions; overlaying a plurality of respective graphic images containing program guide information over respective ones of each of said plurality of IPG video portions to form a plurality of IPG page portions, each of said plurality of IPG page portions comprising a respective common video portion and a plurality of programming information portions, and wherein a plurality of IPG page sequences comprises common programming information portions and differing video portions per IPG page sequence;

encoding each sequence of IPG pages within a head-end of an information distribution system to form said plurality of bitstreams; providing a unique packet identifier (PID) for each IPG page; and multiplexing said plurality of bitstreams in a common transport stream to subscriber equipment." (emphasis added).

The limitation providing a unique packet identifier (PID) for each IPG page is not recited in any of the claims under the issued '437 patent. As such, the applicants submit that there is no obviousness-type double patenting regarding claim 15, as amended. Furthermore, claims 16-21 depend, either directly or indirectly, from independent claim 15 and recite additional features thereof. Therefore, and at least for the same reasons as discussed above, the applicants submit that there is also no obviousness-type double patenting regarding these dependent claims. Therefore, the applicants respectfully requests that the obviousness-type double patenting rejection regarding claims 15-21 be withdrawn.

c. 35 U.S.C. §102

The Examiner has rejected claims 15-21 as being anticipated under 35 U.S.C. §102 by Terasawa et al. (U.S. Patent No. 6,147,714, issued November 14, 2000), hereinafter "Terasawa"). The applicants respectfully traverse the rejection.

The applicants have amended independent claim 15 to recite a method for producing an encoded user interface. In particular, claims 15, as amended, recites:

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"A method of producing an encoded user interface, said encoded user interface comprising a plurality of bitstreams representing respective interactive program guide (IPG) pages and forming thereby a sequence of IPG pages, said method comprising:

combining, in a frame synchronized manner, background imagery with each of a plurality of video sequences to form a plurality of IPG video portions;

overlaying a plurality of respective graphic images containing program guide information over respective ones of each of said plurality of IPG video portions to form a plurality of IPG page portions, each of said plurality of IPG page portions comprising a respective common video portion and a plurality of programming information portions, and wherein a plurality of IPG page sequences comprises said common programming information portions and differing video portions per IPG page sequence;

encoding each sequence of IPG pages within a head-end of an information distribution system to form said plurality of bitstreams; providing a unique packet identifier (PID) for each IPG page; and multiplexing said plurality of bitstreams in a common transport stream to subscriber equipment." (emphasis added).

"Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim" (Lindenmann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984) (citing Connell v. Sears Roebuck & Company, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)) (emphasis added). The Terasawa reference fails to disclose each and every element of the claimed invention, as arranged in the claim.

The Terasawa reference fails to teach or disclose "overlaying a plurality of respective graphic images containing program guide information over respective ones of each of said plurality of IPG video portions to form a plurality of IPG page portions, each of said plurality of IPG page portions comprising a respective common video portion and a plurality of programming information portions, and wherein a plurality of IPG page sequences comprises common programming information portions and differing video portions per IPG page sequences". That is, the applicant's invention includes an interactive program guide having a plurality of pages where each IPG page comprises a graphical portion that remains constant and a video portion that changes per page sequence.

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By contrast, the Terasawa reference discloses an information program guide having a graphical component and still pictures, which are produced by the JPEG encoder 109. Nowhere in the Terasawa reference is there any teaching or suggestion of providing a sequence of IPG pages wherein for each page sequence the graphical component remains constant and the video component changes per IPG page. By contrast, the Terasawa reference discloses that each page of the IPG includes a graphical component and a video component that are the same on each page, since the video component is a JPEG image forming a still picture (see Terasawa, column 3, lines 35-49). Therefore, the Terasawa reference fails to teach each and every element as arranged in the claim, since it fails to teach or disclose "each of said at least one sequence of IPG pages comprising a respective common video portion and a common plurality of programming information portions."

As such, the applicants submit that claim 15 is not anticipated and fully satisfies the requirements under 35 U.S.C. §102 and is patentable thereunder. Furthermore, claims 16-21 depend, either directly or indirectly, from independent claim 15 and recite additional features thereof. As such, and at least for the same reasons as discussed above, the applicants submit that these dependent claims also fully satisfy the requirements of 35 U.S.C. §102 and are patentable thereunder. Therefore, the applicants respectfully request that the rejections be withdrawn.

d. 35 U.S.C. §103

1. Claims 2-10 and 14

The Examiner has rejected claims 2-10 and 14 as being obvious under 35 U.S.C. §103 over Terasawa and in view of Alexander, et al. (U.S. Patent No. 6,177,931, issued January 23, 2001, hereinafter "Alexander"). The applicants respectfully traverse the rejection.

The applicants' independent claim 2 recites:

"A method of producing an encoded user interface comprising:
producing a video frame sequence representing an interactive
program guide by combining, in a frame synchronized manner,
background imagery with at least one video sequence and at least one

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graphic containing program guide information to form said video frame sequence;

encoding said video frame sequence within a head end of an information distribution system." (emphasis added)

The test under 35 U.S.C. § 103 is not whether an improvement or a use set forth in a patent would have been obvious or non-obvious; rather the test is whether the claimed invention, considered as a whole, would have been obvious. Jones v. Hardy, 110 USPQ 1021, 1024 (Fed. Cir. 1984) (emphasis added). Thus, it is impermissible to focus either on the "gist" or "core" of the invention, Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc., 230 USPQ 416, 420 (Fed. Cir. 1986) (emphasis added). The combination of Terasawa and Alexander fail to teach the applicants' invention as a whole.

As discussed above, the Terasawa reference discloses combining still pictures from a JPEG encoder with a background and a graphical overlay to produce a program guide, which displays a still picture. Nowhere does the Terasawa reference disclose combining a video sequence in the video frame sequence. That is, the applicants' invention recites limitations for a video sequence to be combined with background imagery and the graphic containing a program guide information, as opposed to Terasawa which utilizes a still image provided from a JPEG encoder. Moreover, the Alexander reference fails to bridge the substantial gap as between the Terasawa reference and the applicants' invention.

In particular, Alexander discloses picture-in-picture (PIP) window for displaying a video program. More specifically, a viewer enters a guide mode illustrated in Figure 1 by a select key. A real-time television program is displayed in the window 12. A translucent overlay of the PIP window can display the title, channel (local number and/or station name), and status (locked or unlocked) of window 12 over the television program so the viewer can still see the entire image (see Alexander, column 3, lines 56-62).

The PIP window of the Alexander reference is provided to the viewer from the set-top terminal after the tuner of the set-top terminal has already tuned to a specific channel to provide a particular television program. Thus, the video provided in the PIP

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window is provided by the set-top terminal, as opposed to being combined with the background imagery and the graphic containing the program image at the head end.

Even if the two references could somehow be operably combined, the combination would merely disclose providing a still picture having a graphical overlay from the head end of a service provider and inserting a picture-in-picture window at the set-top box for displaying a program guide page by said set-top box. As such, the combination of Terasawa and Alexander fails to teach the applicants' invention as a whole, since the two references fails to teach or suggest combining in a frame synchronized manner background imagery with at least one video sequence and at least one graphic containing program guide information to form said video frame sequence, and encoding the video frame sequence within in a head end of an information distribution system.

As such, the applicants submit that claim 2 is not obvious and fully satisfies the requirements under 35 U.S.C. §103 and is patentable thereunder. Furthermore, claims 3-14 depend, either directly or indirectly, from independent claim 2 and recite additional features thereof. As such, and for at least the same reasons as discussed above, the applicants submit that these dependent claims are also not obvious and fully satisfy the requirements under 35 U.S.C. §103 and are patentable thereunder. Therefore, the applicants respectfully request that the rejections be withdrawn.

2. Claims 11-13

The Examiner has rejected claims 11-13 as being obvious under 35 U.S.C. §103 over Terasawa in view of Alexander and further in view of Civanlar et al. (U.S. Patent 5,623,308, Issued April 22, 1997, hereinafter "Civanlar"). The applicants respectfully traverse the rejection.

Claims 11-13 respectively depend from independent claim 2 and recite additional features thereof. For example, claim 11, when combined with independent claim 2, recites:

"A method of producing an encoded user interface comprising:
producing a video frame sequence representing an interactive
program guide by combining, in a frame synchronized manner,

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background imagery with at least one video sequence and at least one graphic containing program guide information to form said video frame sequence;

encoding said video frame sequence within a head end of an information distribution system;

wherein the video frame sequence is encoded using slice based encoding." (emphasis added)

As discussed above, neither the Terasawa nor Alexander reference, either singularly or in combination, teach or suggest the applicants' invention as a whole. The combination of Terasawa and Alexander merely disclose providing a still picture having a graphical overlay from the head end of a service provider and inserting a picture-in-picture window at the set-top box for displaying a program guide page by the set-top box. As such, the combination of Terasawa and Alexander fails to teach the applicants' invention as a whole, since the two references fails to teach or suggest "combining, in a frame synchronized manner, background imagery with at least one video sequence and at least one graphic containing program guide information to form said video frame sequence, and encoding the video frame sequence within in a head end of an information distribution system." Furthermore, the Civanlar reference fails to bridge a substantial gap as between the Terasawa and Alexander references and the applicants' invention.

In particular, Civanlar merely discloses coding a video frame sequence using slice based encoding. However, the Civanlar reference fails to teach or even suggest combining in a frame synchronized manner background imaging with at least one video sequence and at least one graphic containing program guide information to form said video frame sequence and encoding the video frame sequence within a head-end of an information distribution system. That is, the applicants' invention provides the interactive program guide having a video sequence and a background and a graphic containing program guide at the head end, while the combination of references cited by the Examiner teach that the at least one video sequence is provided by the set-top terminal, such as in the form as a picture-in-picture window. Therefore, the three references fail to teach the applicants' invention as a whole.

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As such, the applicants submit that claim 11 is not obvious and fully satisfies the requirements under 35 U.S.C. §103 and is patentable thereunder. Furthermore, claims 12 and 13 recite in part similar limitations as recited in claim 11. As such, and for at least the same reasons as discussed above, the applicants submit that these dependent claims are also not obvious and fully satisfy the requirements under 35 U.S.C. §103 and are patentable thereunder. Therefore, the applicants respectfully request that the rejections be withdrawn.

CONCLUSION

The applicants believe all the claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring the issuance of an adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Steven M. Hertzberg, Esq. or Eamon J. Wall, Esq. at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

8/7/03

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Appendix I
MARKED-UP VERSION OF THE CLAIMS

3. The method of claim 2 wherein said encoding step further comprises the step of: encoding the [composited] video frame sequence to compress information therein to form a digital bitstream.

7. The method of claim 6 wherein fifteen program guide sequences are formed, encoded, and contained in [a] said common transport stream.

15. [Apparatus for producing an encoded user interface comprising:
a compositor for producing a frame sequence representing an interactive program guide;

an encoder, coupled to said compositor and located within a head end of an information distribution system, for encoding said frame sequences to form a bitstream.]

A method of producing an encoded user interface, said encoded user interface comprising a plurality of bitstreams representing respective interactive program guide (IPG) pages and forming thereby a sequence of IPG pages, said method comprising:
combining, in a frame synchronized manner, background imagery with each of a plurality of video sequences to form a plurality of IPG video portions;

overlaying a plurality of respective graphic images containing program guide information over respective ones of each of said plurality of IPG video portions to form a plurality of IPG page portions, each of said plurality of IPG page portions comprising a respective common video portion and a plurality of programming information portions, and wherein a plurality of IPG page sequences comprises common programming information portions and differing video portions per IPG page sequence;

encoding each sequence of IPG pages within a head-end of an information distribution system to form said plurality of bitstreams;

providing a unique packet identifier (PID) for each IPG page; and

multiplexing said plurality of bitstreams in a common transport stream to subscriber equipment.

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16. [The apparatus of claim 15 wherein said compositor produces a plurality of frame sequences and said encoder comprises a plurality of encoders for encoding each frame sequence in said plurality of frame sequences to form a plurality of bitstreams.] The method of claim 15, wherein at any instance, each bitstream comprises a different graphical component and a matching video component.

17. [The apparatus of claim 16 further comprising
a multiplexer for multiplexing said plurality of bitstreams into a transport stream.] The method of claim 16, further comprising providing an indicator in each bitstream where said video component may be switched from one PID to another PID.

18. [The apparatus of claim 17 wherein said multiplexer assigns a different identification code to each said bitstream.] The method of claim 17, further comprising forming said IPG pages in a similar length compared to each other.

19. [The apparatus of claim 17 further comprising a program guide graphics generator for producing said program guide graphics and foreground overlay graphics, where said foreground overlay graphics are included into the transport stream as user data.] The method of claim 18, further comprising:
identifying a longest IPG page;
inserting null packets into other IPG pages such that all of said IPG pages are equal in length; and
adding switching packets at an end of said IPG sequence after said null packets.

20. [The apparatus of claim 17 further comprising a program guide graphics generator for producing said program guide graphics and foreground overlay graphics, where said foreground overlay graphics are included into the transport stream as private data.] The method of claim 17, further comprising:

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buffering all packets for all IPG pages of for each sequence of IPG pages prior to forming said transport stream;

ordering packets of said IPG pages in said transport stream, wherein said packets for each IPG page appear at slightly higher or lower frequencies, thereby finishing at a common point; and

adding switching packets at an end of each sequence of IPG pages.

21. [The apparatus of claim 15 wherein said encoder is an MPEG-2 encoder.] The method of claim 17, further comprising:

starting each IPG page sequence together;

waiting until all packets for all of said IPG pages are generated; and

inserting switching packets in said bitstreams at a common interval and location in said bitstreams.